

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4. SALEM, MASS., DECEMBER, 1872. No. 12.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, DECEMBER 9, 1872.

Meeting this evening at 7 30 o'clock. The PRESIDENT in the chair. Records of preceding meeting read.

The evening was occupied by the reading of a communication, by Mr. John Robinson, on

FERNERIES, HOW TO MAKE THEM, AND WHAT TO PUT IN THEM.

Fern cases, or ferneries, as most of us call them, were originally called Wardian cases, in honor of their inventor, Dr. B. N. Ward of London, who published a book upon the subject in 1842. These cases are only a modification of the handglass always used to force or protect plants in the greenhouse or open air; yet the placing of this in a practical way renders it easy to import the plants of foreign tropical countries, which otherwise could never be seen here in a living state, besides enabling us to grow at home as beautiful ferns and other delicate, moisture-loving plants as are seen in the hot-house or conservatory.

The fern case, as it comes from the cabinet-maker's, is

a handsome piece of furniture, but an expensive one ; so expensive, perhaps, as to deter many from possessing a fernery. This need not be, for at home a case can be made just as serviceable, and having some advantages even over the expensive ones.

Procure from your carpenter a good pine board, of the dimensions you may wish, for the base of your structure, which by the way should be about one-third longer than wide. Next obtain a suitable moulding, black walnut is the best, and fit it around the base board as if it was a picture frame on end. Next have a zinc pan made to fit closely inside of this, coming up to the top of the moulding ; do not have any turned over edge or ring to the pan, as they are of no use, neither should the pan be made first, as it is difficult to make a neat box to fit outside it. Have the pan painted on the inside with a good coat of tar, as the delicate roots of the plants dislike to come in contact with a metal surface. Next comes the glass, and here is where most persons fail. Be sure the glass is inside the pan, and never have the pan inside the glass, for the moisture collecting on the glass runs down outside the pan to the woodwork, rotting it, and very likely between the moulding and base board on to the table or what else the case rests on, causing much trouble ; also, in watering, the glass directs the water in like manner, with the same, if not worse, results.

A good proportion for the glass is to have it as high above the base as the case is wide, and it should go to the bottom of the pan ; have the corners true and the top level, that the plate of glass which covers the top, and which should be one-fourth of an inch larger all around, shall be even. With common flour paste attach narrow strips of cloth up over the corner angles on the outside and but only an inch or so down the inside from the top.

When dry, paste some dark paper over it, so as to cover the cloth, also around the top plate of glass to prevent the edge from cutting your hands; no cloth is necessary for this. Fill and oil the black walnut moulding, and the case is complete.

A still more simple one is to tar the inside and paint the outside of a shallow pine box, and place the glass directly inside it. If you intend purchasing a handsome case, it will be better to have one made to order, as all the ready made ones usually offered for sale have the case poorly and incorrectly constructed in more ways than one; nearly all have flat tops, to be avoided where there is woodwork (the home made case having no woodwork at the top, it is not a disadvantage). One advantage possessed by the expensive case is that the whole top takes off, enabling you to work all around and not entirely from overhead. Here you may construct ruins, grottos, arches, etc., with pumice and cement; pumice is so light that it adds but little weight to the case, and the cement will bind the whole together as firmly as one rock, all at a very slight expense, at the same time adding much to the beauty of the interior. Very neat circular cases are for sale at the stores, and can be filled so as to be very attractive; they can also be used as fern nurseries. To do this, make the earth damp and firm on top, having first placed a few small pieces of broken flower pots in the upper soil. Take a leaf of some fern, or several different species of ferns, if you desire, that have the fruit quite ripe; this can be discovered by shaking over white paper, when, if ripe, a brown powder will come off; these are the spores or seeds. Dust these over the prepared earth, replace the glass, and leave the case in a warm shady corner. In a few weeks, if not permitted to become dry, a green scum will appear, which in time

will transform itself into the most beautiful little ferns, that may be separated, potted, or transferred to other cases.

Now to fill the case. First make, if the pan be three inches deep, about one inch in depth of drainage, pebbles, charcoal, broken bricks, or, better still, broken flower pots; over this a thin layer of moss or coarse fibrous stuff of some sort to prevent the earth washing into the drainage and choking it. Some cases have holes in the bottom and glass receptacles for superfluous water; but if care be used in watering, this will be entirely unnecessary. For soil suitable to grow most plants likely to be in the fernery, a mixture of one part sand, one part peat, two parts light pasture loam (leaf mould may be used for peat), will do well. The earth should be heaped up a little in the centre, or if the case is large two or three little elevations may be made; upon these place the larger ferns or plants, with the others distributed around them. A log of wood covered with moss and small ferns is a very pretty centre piece, and to cover the ground the little running *Selaginella*, common in all greenhouses, answers better than almost anything else, except our own native mosses, which must be treated with care, or else they mould or dry up.

Fergeries may be divided, if you like, into two classes, dormant and active. By dormant I mean such as contain plants which lie at rest during the winter months, chiefly our natives and others like them in habit that have been introduced. These it is well to arrange separately, as they require less heat than the species growing all the year round, chiefly from the tropics, which form the active fernery. The dormant fernery can be made very interesting, the plants in it keeping about the same all the winter, but growing towards spring; and as many like

the pleasure of filling their case every fall, this is as good a way as any to do, as it is a pretty ornament for winter, and in summer need not be cared for. Of the two thousand exotic species known to exist, but three hundred probably can be purchased in this country, and of these comparatively few are suitable to grow in the case. Most of the smaller growing species for sale hereabouts will do, particularly those of *Pteris*, *Doodia*, and *Adiantum* (maiden hair ferns). Gold and silver ferns require care, as the yellow and white farina washes off in watering. Besides ferns, *Begonias*, *Dracænas* and *Marantas* do well for the centre of a case, and many others can be tried; even if they do not succeed there is a pleasure in experimenting.

In New England there are about the same number of ferns as in Old England, forty-five or six. About Salem, say within ten miles' radius, there are sixteen genera, twenty-nine species; of these, few are suited to the fernery. The larger ones grow well in the garden, on the northerly side of a fence or building. Of the smaller ones, the ebony spleenwort, two or three of the *Aspidiums* or shield ferns, the *Asplenium Trichomanes*, do well; the climbing fern will look pretty for a while and some of the ferns which lose their foliage at the frost, will, if their roots be planted just under the moss, grow toward spring, such as the beech ferns, hay scented ferns, New York ferns and others. The moonwort, and common polypody which grows every where, should never be left out, and the harts tongue, and walking ferns, are valuable accessions if they can be had. This comprises about all the native ferns of use that can be collected here, but there are many little plants to associate with them which add much to the beauty of the case. The partridge berry (*Mitchella repens*) can be gathered in bunches, regardless

of roots, tucked in the moss and earth, where it will grow, bloom, and often fruit.

The rattlesnake plantain (incorrectly called adder's tongue), the Hepatica, gold thread, Linnea, all do well, and club mosses, wintergreen, checkerberry, all add to the effect. The larger foreign and native ferns may be grown in an open fernery, which should be in a room with as moist air as possible.

Do not drown your plants. Persons frequently ask, "How often shall I water my plants?" It is impossible to answer, except to say "whenever they are dry;" with the same amount of water per day, in a cool room the earth in a flower pot would be mud, while in a hot room it would be powder in a few hours. To avoid pests, mould, etc., sprinkle the ferns occasionally and give air an hour or more every day. Wiping off the moisture from the glass will take away many impurities. Cases sprinkled often seldom require watering, and it is surprising how long life will last on a small supply of water. I once planted in the bottom of an olive bottle a fern and some moss, corked it, and sealed the top over with sealing wax, placed it upon a light shelf, and left it; the fern flourished about a year, and weeds which sprang up lived six months longer; life lasted eighteen months in all, without the addition of a single drop of water.

Do not place the fernery at the southern window, in the full glare of the sun; an eastern or western one is better; turn it around every week that the plants may grow evenly. The case may be filled in August, to be established by winter. Some fill them as early as June, others not till October, but August is the best for the tropical fernery; the natives need not be attended to till September, if you like. Not only may ferns be grown in cases but some species are very beautiful as basket or pot plants.

A cocoanut may be formed into a very neat basket by sawing off the top and burning holes half an inch across all over the shell with two small ones at the top opposite each other for the wire to suspend it by ; if in this a fern is planted which has running roots with leaf buds, the effect is in time to cover the whole shell with the beautiful foliage, as these little roots find their way to every hole before long. For this, *Adiantum setulosum* and *A. Æthiopium* are the best. Baskets to hang in the top of a fern case may be made of thin pliable bark, wired together. Wire baskets lined with moss and filled with earth are fine for ferns with stems which run on top of the soil, such as most of the *Davallias*, *Polypodium aureum* a native of Florida, and others. The hare's foot fern is one such, throwing out woolly feet in advance of the leaves. A log hollowed out on one end is most suitable to grow the stag horn ferns upon ; they will in time form huge crowns on the top of the log, while little creeping species may be grown successfully on the side at the same time if wired on with a little moss and earth. Hollow stone ware pillows are made with pockets in the sides, the centre filled with earth, ferns planted in the pockets, and the whole covered with a bell glass. Wire netting can be formed into a tube filled with coarse earth, and ferns inclined to climb by rooting stems, as the ivy does, can be made to cover it with foliage. In fact, there is no end to the variety of design that can be introduced into the fernery whether it be a simple bell glass or a structure one hundred feet long by forty wide and high. Of this latter class of ferneries most beautiful ones are described in foreign books, where sometimes the side walls are of turf covered with the creeping *Lycopods* and ferns, while little brooks, mimic waterfalls and ponds add both to the beauty of the place and to the air, the moisture necessary for the

NATURHISTORISCHEN VEREIN DER PREUSSISCHEN RHEINLANDE UND WESTPHALENS IN BONN. Verhandlungen, xxviii, xxix. Jahrg. 1871, 1872. 2 pamphlets 8vo.
 NATURWISSENSCHAFTLICHEN VEREINE ZU BREMEN. Abhandlungen Band iii, Heft II, 1872. 8vo pamph.

PHILOSOPHICAL AND LITERARY SOCIETY. Annual Report for 1871-2. 8vo pamph.
 PHYSIKALISCH-MEDICINISCHE GESELLSCHAFT IN WÜRZBURG. Verhandlungen, Neue Folge. Bd. iii. Heft 1, 2, 1872.

SOCIÉTÉ D'ACCLIMATATION, Paris. Bulletin Mensuel. Tome ix, Nos. 6, 7, 1872. 2 pamphlets, 8vo.

VERMONT STATE LIBRARY. Vermont Legislature Directory, 1872-3, 1 vol. 12mo. Montpelier, 1872.

PUBLISHERS. American Journal of Science and Arts. American Naturalist. Christian World. City Post. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Ipswich Chronicle. Lawrence American. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seamen's Friend. Western Lancet.

The SUPERINTENDENT of *Museum* reported the following:—

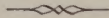
From FARMER, MOSES G. Portrait of Bishop Griswold.

LAMSON, F. Paper-weight, formerly belonging to Charles Dickens, bought in London by donor.

MARSH, Miss MARY. A Loom, used in the farmer's family in the last century.

PORTER, Miss M. A. View of Northey's Block, built in 1872.

STIMPSON, JAMES C. Relics from the Boston Fire, November, 1872.



REGULAR MEETING, MONDAY, DECEMBER 23, 1872.

Meeting this evening at 7 30 o'clock. The PRESIDENT in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence:—

From T. C. Amory, Boston, Dec. 19; Jacob Batchelder, Lynn, Dec. 5, 18; P. A. Hanaford, New Haven, Dec. 12; Charles V. Hanson, Peabody, Dec. 13; Alfred Osgood, Newburyport, Dec. 13; Proctor Bros., Gloucester, Dec.; Buffalo Historical Society, Dec. 19; Peabody Institute, Danvers, Dec. 14; New Jersey Historical Society, Dec. 21.